



# **ASAP-X, Automated Safety Assessment Protocol - Explosives**



**Mark Peterson**  
**Department of Defense**  
**Explosives Safety Board**

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# Overview



- **Consequence Tool Introduced in Technical Paper 23**
- **Written in Microsoft Excel 2003 is Based on DoD 6055.09-STD**
- **Assists in Determining Explosive Operations Hazards**
- **Two Different Worksheets - ECMs and All Other PESs**
- **Calculates 6 Establish Zones (IBD is the Outermost Zone)**
- **Provides User with Potential Personnel and Building Loss Information with Minimal Input**
- **Allows User to Quickly Compare the Consequences from Explosives Hazards for Different Quantities of NEW at a PES**



# Background



- **Presents a tool to standardize the deviation process and provide consequence information for explosives risk decisions**
- **Provides decision-makers an understandable and consolidated information package for reducing and managing residual risk**





# Objectives



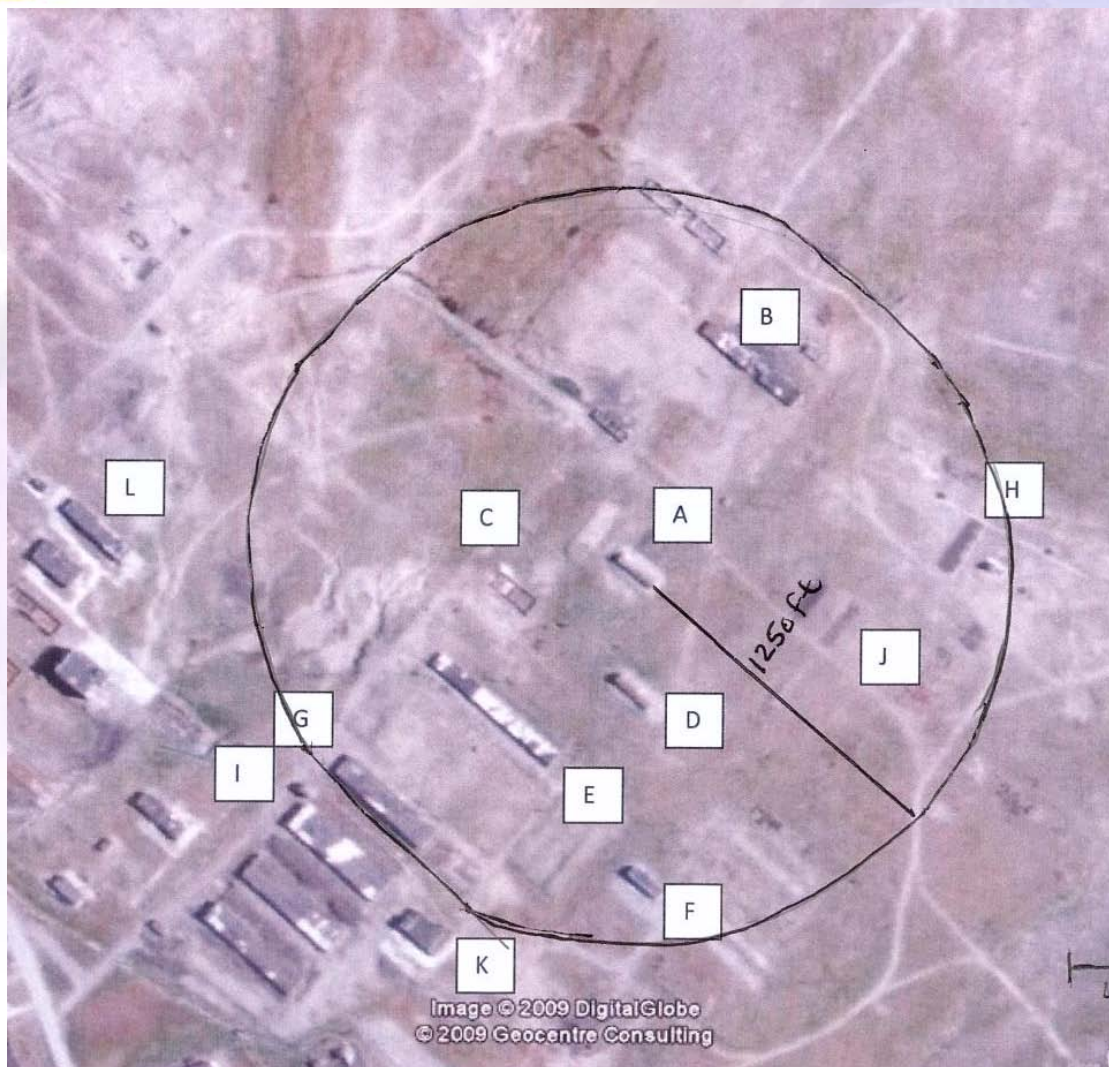
- **Provide the maximum possible protection to people and property**
- **Make informed risk decisions at the appropriate level of leadership**
- **Provide standardized information for determining and assessing explosives safety risk**



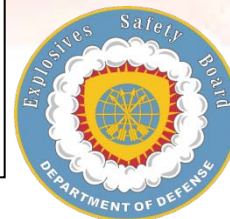




# ASAP-X Tool Example Map



- A – PES
- B – 760 FT
- C – 300 FT
- D – 280 FT
- E – 600 FT
- F – 940 FT
- G – 1190 FT
- H – 1050 FT
- I – 1320 FT
- J – 615 FT
- K – 1350 FT
- L – 1700 FT





# ASAP-X Tool PES Input #1

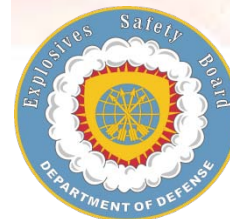
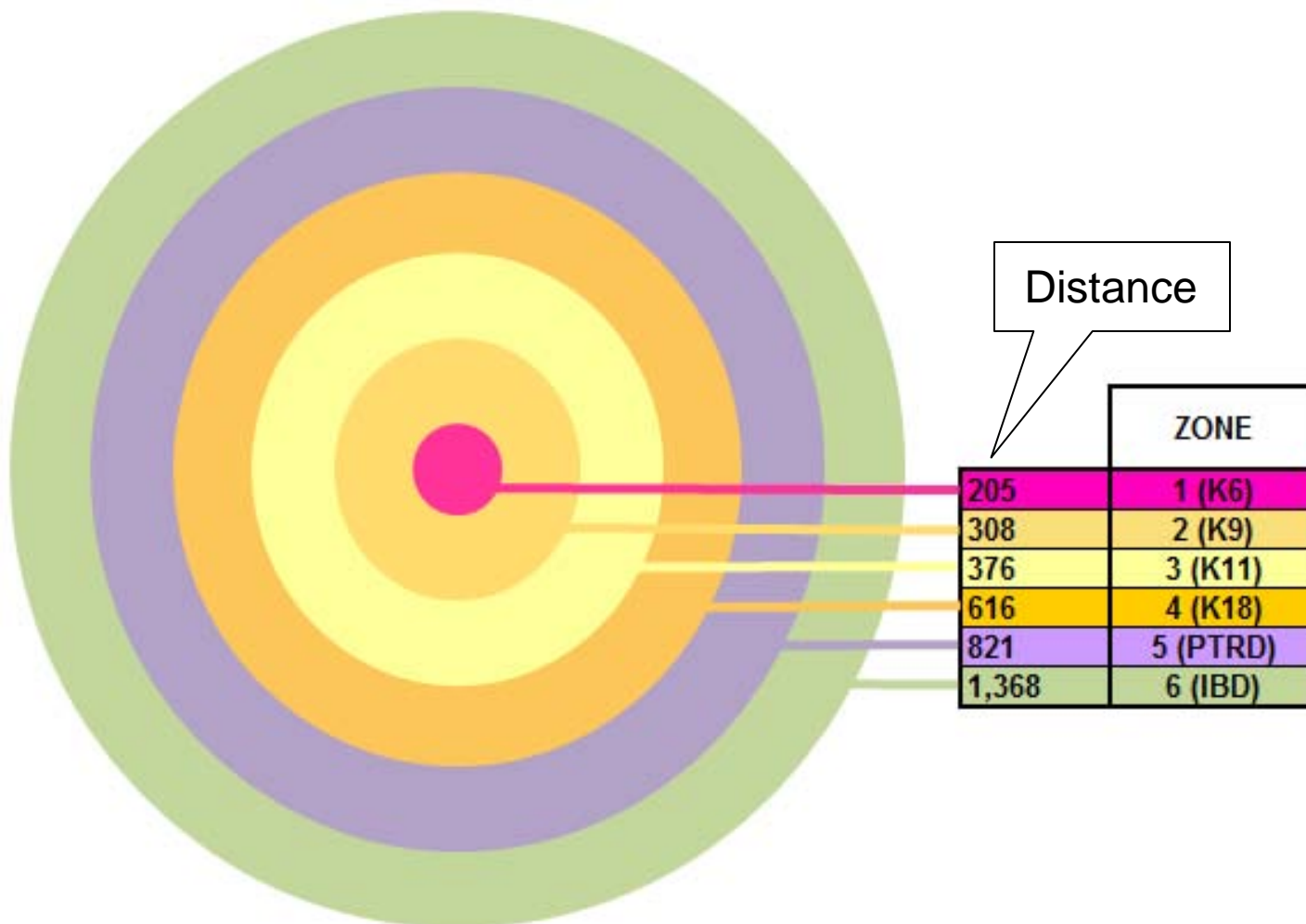


ALL OTHER PES INPUT			
HAZARD DIVISION	NEW		
1.1	40000	Is the PES an open pad?	No
1.2.1	20000		
1.2.1 MCE	451	If the PES is a structure, is it capable of stopping primary fragments?	No
1.2.2	100000		
1.2.3	100000		
1.2.3 MCE	450		
1.2.3 HFD (xx)	12		NEW in Pounds
1.3	350000		Dist in Feet
1.4	400000		Bldg Cost in \$
ES INPUT DATA			
ES Name	Dist from PES	Personnel at ES	Bldg Cost
B	760	30	\$2,500,000
C	300	3	\$500,000
D	280	3	\$750,000
E	600	18	\$2,000,000
F	940	3	\$250,000
G	1190	20	\$3,000,000
H	1050	6	\$450,000
I	1320	25	\$4,500,000
J	615	2	\$250,000
K	1350	6	\$750,000
L	1700	12	\$900,000





# ASAP-X Tool PES Output #1







# ASAP-X Tool PES Output #1



ES OUTPUT DATA						
ES Name	Distance From PES	Zone	Personnel at ES	Fatalities	Building Cost	Building Damage Loss
B	760	5(PTRD)	30	2.2	\$2,500,000.00	\$723,143.94
C	300	2(K9)	3	2.7	\$500,000.00	\$500,000.00
D	280	2(K9)	3	2.8	\$750,000.00	\$750,000.00
E	600	4(K18)	18	4.3	\$2,000,000.00	\$1,066,662.75
F	940	6(IBM)	3	0.1	\$250,000.00	\$41,839.84
G	1190	6(IBM)	20	0.3	\$3,000,000.00	\$296,376.92
H	1050	6(IBM)	6	0.1	\$450,000.00	\$61,735.43
I	1320	6(IBM)	25	0.3	\$4,500,000.00	\$284,118.50
J	615	4(K18)	2	0.4	\$250,000.00	\$125,520.31
K	1350	6(IBM)	6	0.1	\$750,000.00	\$41,182.05
L	1700	>IBM	12		\$900,000.00	





# ASAP-X Tool PES Output #1



ALL OTHER PES OUTPUT					
ZONE	DISTANCE	FATAL	BUILDING DAMAGE LOSS	% BLDG DAMAGE	% FATAL
1	205				
2	308	6	\$1,250,000	100%	100%
3	376				
4	616	5	\$1,192,183	53%	25%
5	821	3	\$723,144	29%	10%
6	1,368	1	\$725,253	8%	2%

TOTAL PEOPLE AFFECTED	116
TOTAL FATALITIES	15
% FATALITIES	12.93%
TOTAL BUILDING COSTS	\$14,950,000
TOTAL BLDG DAMAGE LOSS	\$3,890,580
% BUILDING DAMAGE LOSS	26.02%
TOTAL # OF ESS	10





# ASAP-X Tool PES Input #2

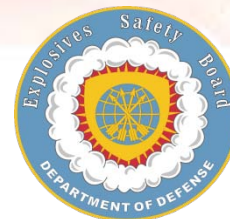
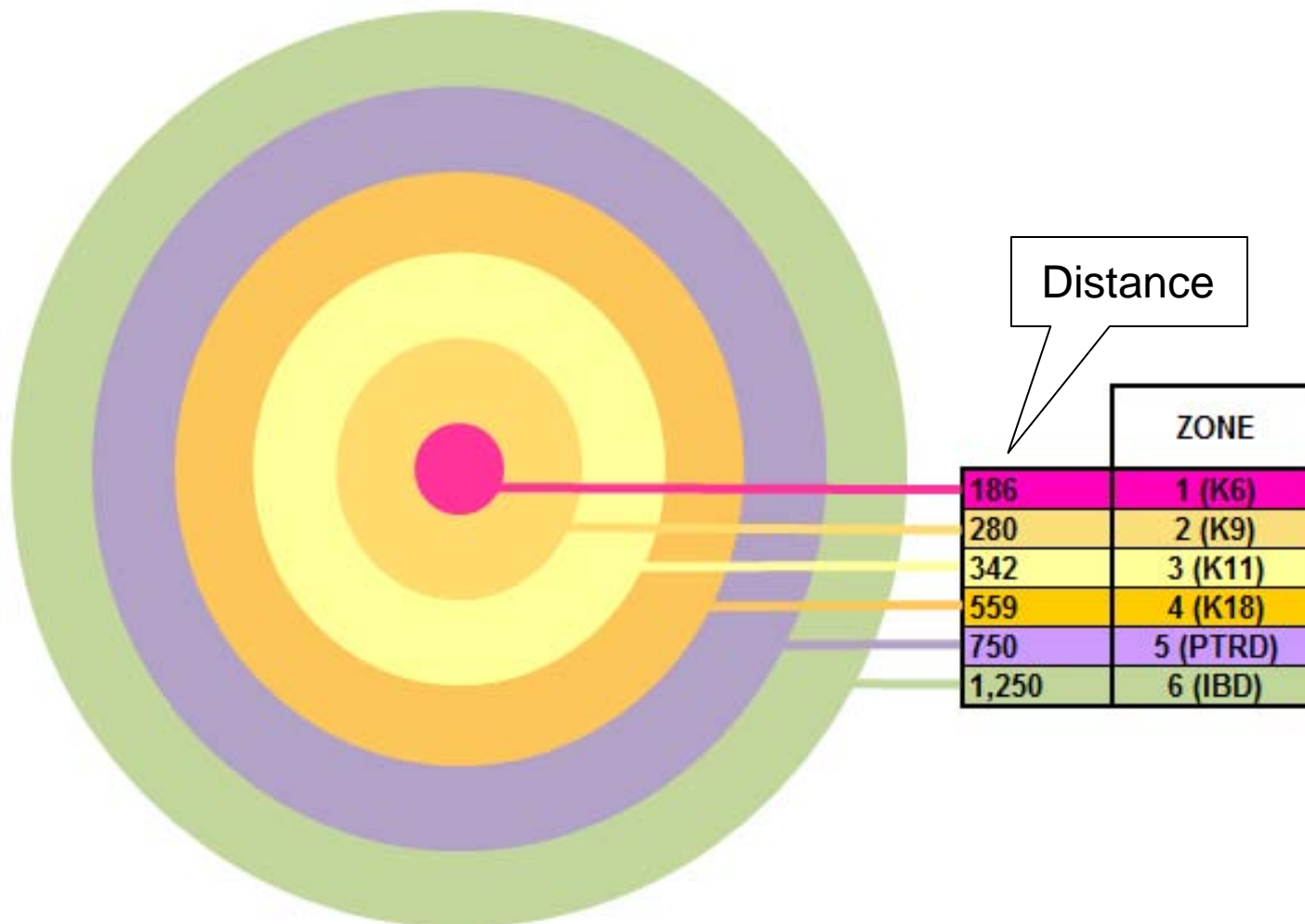


ALL OTHER PES INPUT			
HAZARD DIVISION	NEW		
1.1	30000	Is the PES an open pad?	No
1.2.1	20000		
1.2.1 MCE	451	If the PES is a structure, is it capable of stopping primary fragments?	No
1.2.2	100000		
1.2.3	100000		
1.2.3 MCE	450		
1.2.3 HFD (xx)	12		NEW in Pounds
1.3	350000		Dist in Feet
1.4	400000		Bldg Cost in \$
ES INPUT DATA			
ES Name	Dist from PES	Personnel at ES	Bldg Cost
B	760	30	\$2,500,000
C	300	3	\$500,000
D	280	3	\$750,000
E	600	18	\$2,000,000
F	940	3	\$250,000
G	1190	20	\$3,000,000
H	1050	6	\$450,000
I	1320	25	\$4,500,000
J	615	2	\$250,000
K	1350	6	\$750,000
L	1700	12	\$900,000





# ASAP-X Tool Output #2







# ASAP-X Tool Output #2



ES OUTPUT DATA						
ES Name	Distance From PES	Zone	Personnel at ES	Fatalities	Building Cost	Building Damage Loss
B	760	6(IBD)	30	0.6	\$2,500,000.00	\$492,491.15
C	300	3(K11)	3	2.6	\$500,000.00	\$500,000.00
D	280	3(K11)	3	2.7	\$750,000.00	\$750,000.00
E	600	5(PTRD)	18	2.9	\$2,000,000.00	\$871,194.98
F	940	6(IBD)	3	0.0	\$250,000.00	\$35,746.68
G	1190	6(IBD)	20	0.2	\$3,000,000.00	\$203,919.71
H	1050	6(IBD)	6	0.1	\$450,000.00	\$49,491.36
I	1320	>IBD	25		\$4,500,000.00	
J	615	5(PTRD)	2	0.3	\$250,000.00	\$103,009.04
K	1350	>IBD	6		\$750,000.00	
L	1700	>IBD	12		\$900,000.00	





# ASAP-X Tool Output #2



ALL OTHER PES OUTPUT					
ZONE	DISTANCE	FATAL	BUILDING DAMAGE LOSS	% BLDG DAMAGE	% FATAL
1	186				
2	280				
3	342	6	\$1,250,000	100%	100%
4	559				
5	750	4	\$974,204	43%	20%
6	1,250	1	\$781,649	13%	2%

TOTAL PEOPLE AFFECTED	85
TOTAL FATALITIES	11
% FATALITIES	12.94%
TOTAL BUILDING COSTS	\$9,700,000
TOTAL BLDG DAMAGE LOSS	\$3,005,853
% BUILDING DAMAGE LOSS	30.99%
TOTAL # OF ESs	8





# ASAP-X Output Comparison



## 40,000 LBS NEWQD

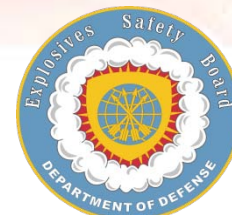
## 30,000 LBS NEWQD

ALL OTHER PES OUTPUT					
ZONE	DISTANCE	FATAL	BUILDING DAMAGE LOSS	% BLDG DAMAGE	% FATAL
1	205				
2	308	6	\$1,250,000	100%	100%
3	376				
4	616	5	\$1,192,183	53%	25%
5	821	3	\$723,144	29%	10%
6	1,368	1	\$725,253	8%	2%

TOTAL PEOPLE AFFECTED	116
TOTAL FATALITIES	15
% FATALITIES	12.93%
TOTAL BUILDING COSTS	\$14,950,000
TOTAL BLDG DAMAGE LOSS	\$3,890,580
% BUILDING DAMAGE LOSS	26.02%
TOTAL # OF ESS	10

ALL OTHER PES OUTPUT					
ZONE	DISTANCE	FATAL	BUILDING DAMAGE LOSS	% BLDG DAMAGE	% FATAL
1	186				
2	280				
3	342	6	\$1,250,000	100%	100%
4	559				
5	750	4	\$974,204	43%	20%
6	1,250	1	\$781,649	13%	2%

TOTAL PEOPLE AFFECTED	85
TOTAL FATALITIES	11
% FATALITIES	12.94%
TOTAL BUILDING COSTS	\$9,700,000
TOTAL BLDG DAMAGE LOSS	\$3,005,853
% BUILDING DAMAGE LOSS	30.99%
TOTAL # OF ESS	8





# ASAP-X Output Comparison



## 40,000 LBS NEWQD

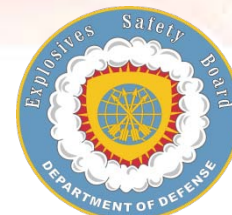
## 20,000 LBS NEWQD

ALL OTHER PES OUTPUT					
ZONE	DISTANCE	FATAL	BUILDING DAMAGE LOSS	% BLDG DAMAGE	% FATAL
1	205				
2	308	6	\$1,250,000	100%	100%
3	376				
4	616	5	\$1,192,183	53%	25%
5	821	3	\$723,144	29%	10%
6	1,368	1	\$725,253	8%	2%

TOTAL PEOPLE AFFECTED	116
TOTAL FATALITIES	15
% FATALITIES	12.93%
TOTAL BUILDING COSTS	\$14,950,000
TOTAL BLDG DAMAGE LOSS	\$3,890,580
% BUILDING DAMAGE LOSS	26.02%
TOTAL # OF ESS	10

ALL OTHER PES OUTPUT					
ZONE	DISTANCE	FATAL	BUILDING DAMAGE LOSS	% BLDG DAMAGE	% FATAL
1	163				
2	244				
3	299	3	\$750,000	100%	100%
4	489	3	\$498,684	100%	100%
5	750	3	\$833,608	37%	15%
6	1,250	1	\$781,649	13%	2%

TOTAL PEOPLE AFFECTED	85
TOTAL FATALITIES	10
% FATALITIES	11.76%
TOTAL BUILDING COSTS	\$9,700,000
TOTAL BLDG DAMAGE LOSS	\$2,863,941
% BUILDING DAMAGE LOSS	29.53%
TOTAL # OF ESS	8







# ASAP-X Tool ECM Input

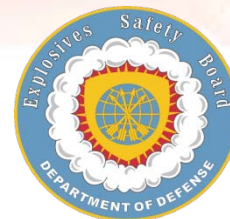
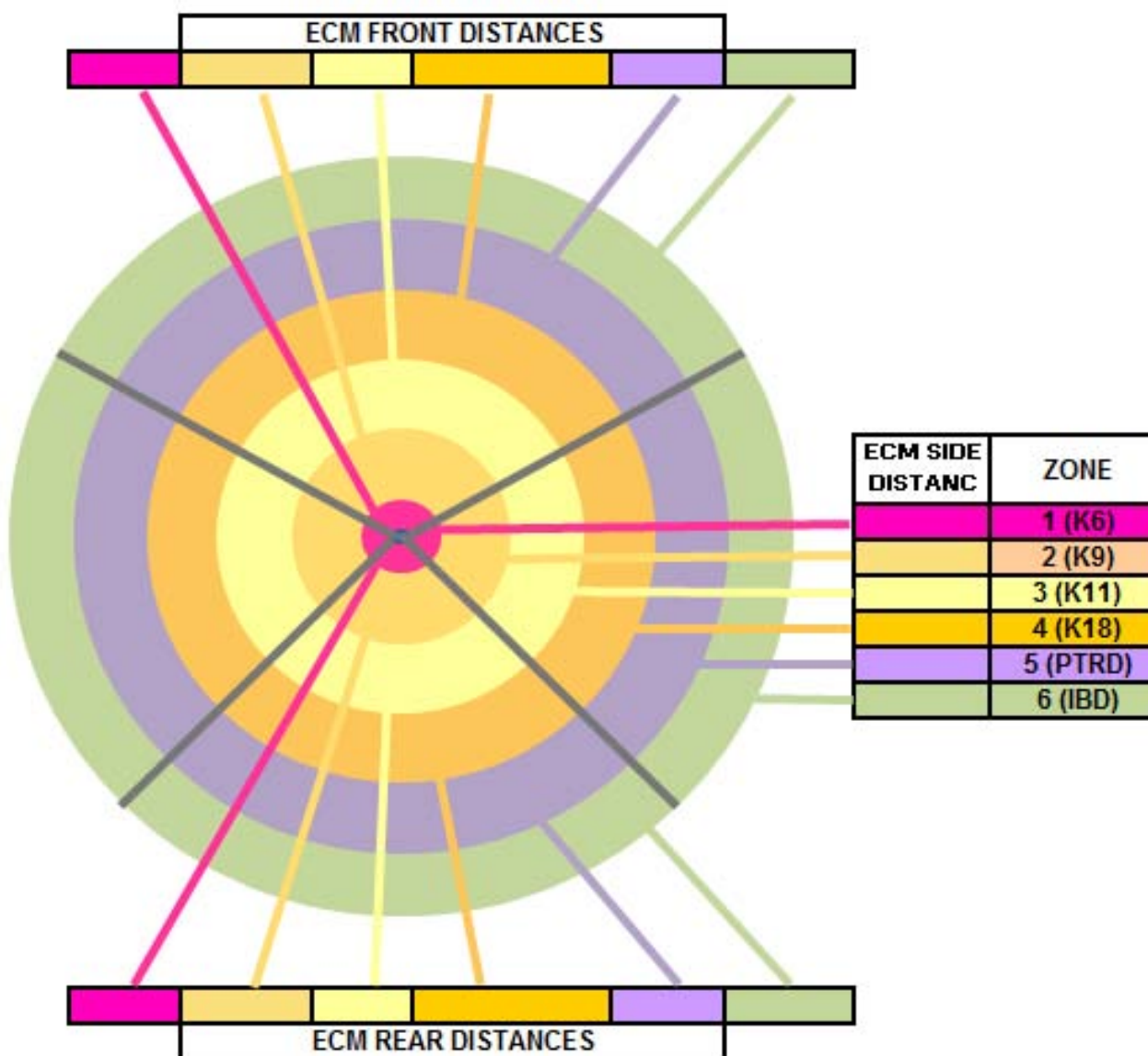


EARTH COVERED MAGAZINE INPUT				
HAZARD DIVISION	NEW			
1.1		Is the ECM undefined?		
1.2.1				
1.2.1 MCE				
1.2.2		Is the ECM 26 ft x 60 ft or larger?		
1.2.3				
1.2.3 MCE				
1.2.3 HFD (xx)				
1.3				
1.4				
ES INPUT DATA				
ES Name	Dist from PES	Personnel at ES	Bldg Cost	Orientation





# ASAP-X Tool ECM Output





# Past and Planned Usage



- **Used by Army in Iraq and Afghanistan**
- **Provided to SDDC for Port Assessments**
- **Used to evaluate locations in Latvia, Korea, Lithuania, and Alaska during recent DDESB trips**
- **Will be used during DDESB Strategic Assessment visits outlined by TP 28**
- **Version 2 upgrade allows for the input of GPS coordinates in determining distances between PES and ESs; Will be released this summer**
- **NATO Version 1 based on AASTP-1 criteria going through Beta Testing; Should be released this summer**





# Questions

